PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Appln. of:	Michael L. Friedman et al.	Group Art Unit:	**1714**
Serial No.:	**10/607,743**	Conf. No.:	7569
Filed:	27 June 2003	Examiner:	Peter SZEKELY
For:	Compositions Comprising Mineralized Ash Fillers	Atty Docket No.:	D0932-00356 [VW-8777]

DECLARATION PURSUANT TO 37 C.F.R. § 1.131

We hereby declare as follows:

1. We are the same Michael L. Friedman and Deborah L. Oberst who are named as co-inventors for the invention described and claimed in the patent application referenced above.

2. Accompanying this Declaration is a true and accurate copy of the Saint-Gobain Corporation Confidential Inventin Disclosure form that we prepared, reporting this invention.

3. As indicated in the Invention Disclosure form, we conceived this invention not later than May 2002, which is earlier than the 22 August 2002.

4. Following conception of the invention, we worked diligently to reduce it to practice and, to the best of our knowledge, our employer's patent attorneys worked diligently to file the application on 27 June 2003.

5. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of

the United States Code and that such willful false statements may jeopardize the validity of this patent application or any patent issuing thereon.

08/31/07
(Date)

Michael L. Friedman

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8/23/07
(Date)

Deborah L. Oberst
Deborah L. Oberst

INSTRUCTIONS - Answer each question. If it does not apply, answer "NA." Complete the form by word processing and then print it out. Do not print it out and then complete in longhand. Use as much space under each heading as is needed for a complete answer. Adjust the number of signature blocks as appropriate for the number of inventors. Do not provide a docket no. If you have questions about the process, call patent counsel. Do not distribute any other copies of the completed disclosure.

SAINT-GOBAIN CORPORATION CONFIDENTIAL

INVENTION DISCLOSURE DOCKET NO.:

1. SUGGESTED TITLE: ***Filled Thermoplastic Materials***

2. Was any of the work funded under a government contract?

___yes, under project number _____
__X_no

3. THE INVENTION:
(Attach or provide here a description of the invention.
What specifically is the problem being addressed?
How have others attempted to deal with this problem?
Why have they not fully succeeded?
What is the approach of the present invention?)

Filled thermoplastic materials are widely used in many applications. The higher the content of the mineral filler, the larger is the savings since as a rule, fillers are less costly than the polymer matrixes. Among other advantages of filled thermoplastic formulations are: increase in modulus, stiffness, and rigidity of the products, higher flame resistance, surface hardness, and reduction in thermal expansion resulting in higher dimension stability of various products and items. However, incorporation of mineral fillers leads to serious disadvantages as well. The disadvantages of filled thermoplastics are related first of all to their rheology, mainly to the increase of melt viscosity and respectively, to difficulties in processing of filled systems. That is why the use of mineral fillers for thermoplastics is limited in terms of their quantity and particle size.
The potential invention discloses a novel family of high filled thermoplastic materials with improved processability, mechanical properties and fire resistance free of the disadvantages of the regular mineral fillers. The potential invention is based on the revealed phenomenon that fully mineralized recycled ash and its combinations with nanofillers, for example, nanoclay, provide a significant reduction in viscosity of thermoplastic melts in comparison to the same polymers filled with regular mineral fillers at the same filler content. At the same time the mechanical, properties and fire resistance of the materials are improved to a level of the thermoplastics with the most common mineral fillers.
Fully mineralized ash is produced by American Ash Recycling Corporation (AARC) with the goal of gaining various heavy metals out of the ash produced by the power station's incinerators. AARC sales the metals and the recycled fully mineralized ahs is being generated as a waste in the process. It is available for a relatively low cost and practically does not contain any metals and hazardous chemicals. The ash has particles of a rounded shape, which probably contributes to better rheological properties of the filled formulations. The viscosity decrease is more substantial when the mineralized ash is combined with nanofillers such as nanoclay. Formulations have been suggested based on virgin and recycled polyolefins, their blends and alloys. The suggested mixtures of recycled ash and limited amount of nanoclay particulate provide a significant reduction of effective melt viscosity in combination with enchanced mechanical properties in comparison to known filled thermoplastics.

4. THE CLOSEST PRESENT ART
(List existing art at the time of invention and activities known by you related to the subject matter of the invention which may be bear on the patentability of the invention.)

A comprehensive patent search has been conducted, and several USA and foreign

patents will be cited to prove the novelty of the technical solution described in this disclosure.

PATENTS (U.S. & Foreign):

PATENT APPLICATIONS FOR CLOSELY RELATED SUBJECT MATTER:
>

TECHNICAL LITERATURE REFERENCES:
>

USE, SALE, OR OFFER FOR SALE:
(List dates and details regarding samples or other information which has been or will be given to persons outside Norton and planned publications, commercial production, use and sale:)

PILOT PLANT/PLANT PRODUCTION, WITH DATES AND QUANTITY:
A family of formulations have been compounded and pelletized in quantities from 20 pounds (for evaluation and research purposes) to several hundreds of pounds for processing trials (extrusion and injection molding). rheological properties have been measured along with modulus, tensile strength, elongation at break, and fire resistance using extruded and molded specimens.
Results of these studies proved the superiority of the new materials. Optimal ratios of the mineralized ash and nanofillers have been identified. Some of the best materials will be used to produce sheets, profiles, and injection molded parts for building products.

RELEASE OUTSIDE OF COMPANY OF INFORMATION OR PRODUCT EMBODYING INVENTION:
(Give precise dates and other details.)

The information has not been released outside the EPG Group.

HAS A SEARCH BEEN MADE?
IF SO, IDENTIFY SCOPE AND ATTACH RESULTS:

The patent search has been conducted through Nerac and other database.

5. INVENTION RECORDS:

(a) Conception Date: May 2002
>
(b) First Written Description: Presentation to the R&D Meetings in July and December 2002

Lab Notebook.
(Attach copy of description pages.)

(c) Who has actually observed your Experimental Work:

Filler Project Team members.

I/We understand that we have an obligation to bring to the attention of the Patent Department any information I/we have concerning prior publication(s) or activities (including commercial sales) that relate to the subject matter of this invention.
>

6.SUBMITTER/S
(Supply below information, signature and date for each submitter.)

1.full name: *Michael L. Friedman*
Title: Technical Director Polymers and Chief Scientist
Work telephone no.: (973) 628 - 5303
home address: 10 Willis Ave., Wayne, NJ
country/ies of citizenship: USA

SIGNATURE:_____ **DATE:**_____

Read and understood by me as witness:

WITNESS:_____ **DATE:**_____

2.full name: Deborah Oberst
Title: VP R& D EPG
Work telephone: (610) 341-7373
Home address:
country/ies of citizenship: USA

SIGNATURE:_____ **DATE:**_____

Read and understood by me as witness:

WITNESS:_____ **DATE:**_____

(Forward the original of this disclosure to your patent counsel, Saint Gobain Corp. Intellectual Property Law Department.

(revised 4/24/98/VRU)

PTO/SB/08a (08-03)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	10607743
Filing Date	2003-06-27
First Named Inventor	Michael L. FRIEDMAN
Art Unit	1714
Examiner Name	Peter SZEKELY
Attorney Docket Number	D0932-00356

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5747560		1998-05-05	Christiani et al.	
	2	6096401		2000-08-01	Jenkines	
	3	6695902		2004-02-24	Hemmings et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							☐

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Attorney Docket Number	D0932-00356

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

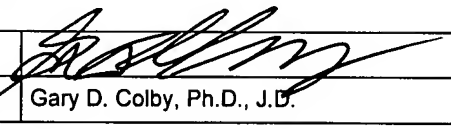
☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ None

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature		Date (YYYY-MM-DD)	2007-09-07
Name/Print	Gary D. Colby, Ph.D., J.D.	Registration Number	40,961

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**